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## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<b>(51) International Patent Classification 6 :</b> <b>A61K 48/00, 38/17, 38/18, C07K 14/435, 14/485, 16/28, C12N 15/11, C07H 21/04</b>	<b>A1</b>	<b>(11) International Publication Number: WO 97/45143</b> <b>(43) International Publication Date: 4 December 1997 (04.12.97)</b>
<b>(21) International Application Number:</b> PCT/US97/09407 <b>(22) International Filing Date:</b> 30 May 1997 (30.05.97)  <b>(30) Priority Data:</b> 60/018,841 31 May 1996 (31.05.96) US  <b>(71) Applicants (for all designated States except US):</b> THE NATIONAL AMERICAN RED CROSS [US/US]; 430 17th Street, N.W., Washington, DC 20006 (US). UNIVERSITE DE GENEVE [CH/CH]; 1, rue Michel Servet, CH-1211 Genève 4 (CH).  <b>(72) Inventors; and</b> <b>(75) Inventors/Applicants (for US only):</b> ZIMRIN, Ann, B. [US/US]; 1235 Crows Foot Road, Marriottsville, MD 21104 (US). MACIAG, Thomas [US/US]; 6050 Valerian Lane, Rockville, MD 20852 (US). PEPPER, Michael, S. [ZA/CH]; 6, chemin-du-chateau, CH-1245 Collonge-Bellerive (CH). MONTESANO, Roberto [IT/CH]; 39, route de Frontenex, CH-1207 Genève (CH). WONG, Michael, K., K. [CA/US]; 16408 Keats Terrace, Derwood, MD 20855 (US).  <b>(74) Agent:</b> MCCONATHY, Evelyn, H.; Law Offices of Evelyn H. McConathy, 11723 Quay Road, Oakton, VA 22124 (US).	<b>(81) Designated States:</b> AU, CA, JP, US, European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).  <b>Published</b> <i>With international search report.</i>	
<b>(54) Title:</b> THERAPEUTIC AND DIAGNOSTIC METHODS AND COMPOSITIONS BASED ON JAGGED/NOTCH PROTEINS AND NUCLEIC ACIDS  <b>(57) Abstract</b>  This invention relates to therapeutic and diagnostic methods and compositions based on Jagged/Notch proteins and nucleic acids, and on the role of their signaling pathway in endothelial cell migration and/or differentiation. In addition, this invention provides a substantially purified Jagged protein, as well as a substantially purified nucleic acid molecule or segment thereof encoding Jagged protein, or a functionally equivalent derivative, or allelic or species variant thereof.		

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US97/09407

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) : Please See Extra Sheet.

US CL : Please See Extra Sheet.

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : Please See Extra Sheet.

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

STN, medline, embase, biosis, scisearch  
jagged, notch ligand, angio7, endothel###

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y --- A	LINSELL, C.E. et al. Jagged: A mammalian ligand that activates Notch1. Cell. 24 March 1995, Vol. 80, pages 909-917, see entire document.	1, 5, 9-11, 25-26 ----- 18-19, 27, 29 ----- 20-24, 30-50
X, P --- Y, P	ZIMRIN, A.B. et al. An antisense oligonucleotide to the notch ligand jagged enhances fibroblast growth factor-induced angiogenesis <i>in vitro</i> . J. Biol. Chem. 20 December 1996, Vol. 271, No. 51, pages 32499-32502, see entire document.	12, 16-17, 28 ----- 30-33, 42, 47-50

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:	T	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
*A* document defining the general state of the art which is not considered to be of particular relevance	X	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
*E* earlier document published on or after the international filing date	Y	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combinations being obvious to a person skilled in the art
*L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	A	document member of the same patent family
*O* document referring to an oral disclosure, use, exhibition or other means		
*P* document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search

31 JULY 1997

Date of mailing of the international search report

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## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US97/09407

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	ZIMRIN, A.B. et al. An antisense oligonucleotide to the notch ligand jagged promotes angiogenesis in bovine microvascular endothelial cells (BMEC) on collagen gels. FASEB J. 30 April 1996, Vol. 10, No. 6, page A1094, abstract no. 547, see entire abstract.	1-50
Y	JOHNSTONE, A. et al. Immunochimistry in practice. Oxford, UK: Blackwell Scientific Publications, 1987, second edition, chapter 2 'Production of Antibodies', pages 30-47, see entire chapter.	18-24, 27, 29, 32, 42-50
A	HARRIS, W.J. et al. Therapeutic antibodies -- the coming of age. TIBTECH. February 1993, Vol. 11, pages 42-44, see entire document.	32, 42-50

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International application No.

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## A. CLASSIFICATION OF SUBJECT MATTER:

IPC (6):

A61K 48/00, 38/17, 38/18; C07K 14/435, 14/485, 16/28; C12N 15/11; C07H 21/04

## A. CLASSIFICATION OF SUBJECT MATTER:

US CL :

530/350, 387.2, 388.2; 536/23.5, 24.5; 435/ 320.1, 69.1, 70.1, 325; 514/2, 44

## B. FIELDS SEARCHED

Minimum documentation searched

Classification System: U.S.

530/350, 387.2, 388.2; 536/23.5, 24.5; 435/ 320.1, 69.1, 70.1, 325; 514/2, 44